



U.S. Fish & Wildlife Service

Currents

REGION 2 – SOUTHWEST REGION

Fisheries Program Highlights

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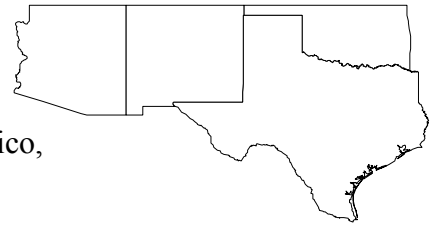


Endangered fountain darter (*Etheostoma fonticola*)

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REGION 2 – SOUTHWEST REGION

The Southwest Regional Office, located in Albuquerque, New Mexico, administers 12 fisheries field stations in Arizona, New Mexico, Oklahoma, and Texas.



The Division of Fishery Resources in the Southwest encompasses 3 Fishery Resources Offices, 5 National Fish Hatcheries, 3 Fish Technology Centers, and 1 Fish Health Center. The Division of Fishery Resources also has responsibility to control aquatic invasive species.

Fishery Resources Offices

The 3 Fishery Resources Offices (Arizona Fishery Resources Office, New Mexico Fishery Resources Office, and Oklahoma Fishery Resources Office) evaluate wild native fish stocks and their habitats, and where feasible, work with partners to restore habitats and fish populations.

These offices provide technical fish management assistance to tribes and other partners with a primary focus on native and interjurisdictional species.

National Fish Hatcheries

The National Fish Hatcheries (Willow Beach, Alchesay-Williams Creek, Uvalde, Tishomingo, and Inks Dam) develop and maintain brood stocks of important fish species, both sport fishes and critically imperiled non-game fishes. The hatcheries are the source of fish and eggs distributed to partners with similar aquatic conservation missions, such as native fish restoration or fulfilling federal mitigation responsibilities.

Hatcheries are often called upon to provide a place of refuge for imperiled aquatic organisms, such as aquatic plants and amphibians.

Fish Technology Centers

The Fish Technology Centers (Dexter, Mora, and San Marcos) develop leading-edge technology for use by tribal, state, and federal fish hatcheries and fishery biologists to make fish culture more productive, cost-effective, and scientifically sound.

Technology improves hatchery efficiency, helps assure the genetic integrity of fishes, at the same time minimizing the effects of hatchery fish on wild fish stocks.

Private aquaculture industry also benefits from scientific information generated by the Fish Technology Centers.

Fish Health Center

Pinetop Fish Health Center biologists assess the well-being of fish that live in the wild or are raised at hatcheries. Fish health

biologists are highly trained in various scientific disciplines, like immunology, epidemiology, toxicology, and genetics. They apply that knowledge in fish health assessments that might lead to early detection of potentially devastating diseases, prescribing preemptive measures.

The National Wild Fish Health Survey allows biologists to assess wild stocks and to share scientific findings with other scientists or the public through a national database.

Fish health assessments at state and federal hatcheries promote good fish culture and ultimately better, healthier fish stocks.

The U.S. Fish & Wildlife Service's fish health program takes a proactive and cooperative approach, networking with other health professionals to ensure healthy fisheries.



Uvalde National Fish Hatchery Maintains Captive Population of Endangered Fountain Darter

The Uvalde National Fish Hatchery maintains a captive population of fountain darters *Etheostoma fonticola*, an endangered species with limited habitat, to safeguard against the threats of chemical spills and drought. The fountain darters are maintained in a refuge comprised of a trough, packed column (to de-gas), biofiltration (nitrification), and heater/chiller unit. The refuge uses a closed-loop, recirculating system in order to reduce the risk of releasing exotic pathogens. Additional fountain darters are collected from the wild—as necessary—to supplement the number of fountain darters in the refuge.

Jae Ahn, Uvalde NFH



-USFWS
Mark Brouder implants a sonic transmitter into a bonytail

Bonytail Telemetry Study Underway in Lake Havasu

The Arizona FRO implanted 12, 12-month sonic transmitters into adult bonytail and began tracking movements of these fish throughout Lake Havasu. To date, 10 of the 12 fish

are continuing to be monitored. Results of this project will hopefully enable us to better understand habitat use by this endangered fish and maybe even help us identify spawning habitat. The bonytail used in this study were raised and held at Dexter National Fish Hatchery and Technology Center before being transported to Lake Havasu for surgery.

Mark Brouder, Arizona FRO



-USFWS
Chuck Minckley "listens" for one of several bonytail in Lake Havasu.

New Mexico State University Students Spend Summer Break Conducting Independent Study

New Mexico State University (NMSU) students Kristin Swaim and Janelle Alleman are conducting an independent study at the Dexter National Fish Hatchery and Technology Center (Center) throughout their summer break.

The NMSU students have started a series of studies that will help to determine different species' egg specific gravity and viability under varying conditions. The

main experiment involves determining the specific gravity of the eggs under differing treatments. The second experiment is an egg viability analysis that is used to determine the optimal level of salinity and lethal level of salinity in which eggs from the various species can tolerate.

The current study includes the Rio Grande silvery minnow and Pecos bluntnose shiner, which are part of the refuge population at the Center, along with plains minnow that were collected from the Pecos River. The study's expected duration is 3 years, during this time they will be introducing other fish species to the project.

Many sister agencies work together to make these types of studies possible. The US Fish and Wildlife Service has provided the location and assistance at the Center and the US Bureau of Reclamation, Albuquerque Office, has provided funding through a Cooperative Project with NMSU.

Maria Bullard, Dexter NFH&TC



-USFWS
NMSU student conducting research.

Arizona FRO is on the Lookout for Humpback Chub

In an attempt to quantify “retention” of endangered humpback chub captured by hoop nets being used to monitor the Little Colorado River population, underwater video cameras are being mounted on hoop nets. Questions regarding the accuracy of catch rates and potential size bias in using this gear type have arose. To address these questions, the Arizona FRO began conducting a pilot study to examine the feasibility of using underwater video cameras to address these potential concerns. To date, cameras have been installed and many hours of video recorded. Folks at the Arizona FRO continue to work out the details of this pilot study and modifying where necessary. Preliminary results indicated that this project may be successful at addressing the potential concerns with using hoop nets as the standard sampling gear.

Mark Brouder, Arizona FRO



-USFWS
Underwater video cameras are mounted to monitors on shore in an attempt to quantify net retention of endangered humpback chub.



-USFWS
New raceway at Williams Creek NFH.

New State-of-the-Art Raceway Constructed at Williams Creek National Fish Hatchery

A new state-of-the-art raceway measuring 8' by 135' replaced two earthen ponds at the Williams Creek National Fish Hatchery as part of a larger project aimed at improving water quality and fish rearing capabilities. Originally, two ponds were at the end of a series of raceways, and while providing 12,660 cubic feet of rearing space, low oxygen and poor water quality allowed production of only 8,000 pounds of trout. The new raceway has a low head oxygenation unit installed in the upper end, providing the benefit of boosting oxygen levels to saturation as seen at the main hatchery spring. The raceway provides 3,300 cubic feet of rearing space, and because of the added oxygen, allows production of 10,000 pounds of trout. In addition, it is designed to be "self-cleaning" through the use of baffles and water velocity to push the solids to the tail end of the raceway for easy disposal.

Sherry White, Williams Creek NFH

Construction of Automated Trash Rake Completed at Alchesay National Fish Hatchery

Alchesay National Fish Hatchery depends on water diverted from the North Fork White River as a supplement to Alchesay Spring for trout production. The North Fork can carry heavy loads of organic debris during periodical periods of heavy run-off. Previously, river intake grates had to be cleaned manually to sustain water flow to the hatchery. As with most hatchery emergencies, blocked intake grates seemed to occur most frequently on weekends between the hours of midnight and 4:00 AM, requiring low water alarms to rally hatchery employees out of their beds to manually clean the intake screens. Missed emergencies spelled dead fish and several fish kills in the past have been attributed to blocked intake grates.

As a solution to this problem, an automated trash rake was installed at Alchesay's river diversion structure. The machine was purchased and installed by Atlas Polar Hydro Rake Systems of Toronto, Canada.

Bob David, Alchesay NFH



-USFWS
New trash rake at Alchesay NFH.



-USFWS
Redbreast sunfish provide chemical cues for salamander tests.

Salamanders May Need to Learn “Friend or Foe”

The San Marcos salamander *Eurycea nana* is a federally threatened, neotenic species endemic to and found only within and near the headwaters of the San Marcos River, Hays County, Texas. It is maintained in captivity at the San Marcos National Fish Hatchery and Technology Center for research and as a backup population to supplement or reestablish the wild population, if needed.

Many introduced predatory fishes have become established in *E. nana* habitat, creating a potential problem. Some amphibians do not react correctly to non-native predators – they don’t recognize them as a threat and can become an easy meal for the invader.

We suspect that *E. nana* may not recognize the chemical cues of non-native predators as a threat and might not exhibit a decrease in activity when presented with their chemical cues (a reaction consistent with an effective anti-predator response). We are testing this by presenting salamanders with the chemical cues from a native predator

(largemouth bass *Micropterus salmoides*), a non-native predator (redbreast sunfish *Lepomis auritus*), a native non-predator (largespring gambusia *Gambusia geiseri*), or a blank control (only water). Time spent in active movement before and after treatment introduction is used to create an activity index to compare responses among treatments. Although testing is not completed, thus far it appears that our suspicions may pan out. If *E. nana* does not recognize *L. auritus* as a threat, predatory pressure from it as well as other non-native predators could affect population size. Additionally, if the need arises to reintroduce captive-bred salamanders, we might need to do some “training” before release into the wild.

Kristen Epp, Texas State University and Joe N. Fries, San Marcos NFH&TC



-USFWS
Paddlefish in raceway at Tishomingo NFH.

Tishomingo National Fish Hatchery Continues Paddlefish, Snapping Turtle, and Alligator Gar Conservation Efforts

Efforts to re-establish self-sustaining populations of paddlefish above selected impoundments in the Arkansas and Red River systems continued with the successful capture and spawning of wild brood stock in April. Currently, we are rearing over 30,000 fingerlings for release into the wild.

Kerry Graves, Tishomingo NFH



-USFWS
Alligator snapping turtle.

Seven of the eight captive female alligator snapping turtles on the hatchery nested, resulting in over 200 eggs. The eggs will be incubated and hatched on station and the young used to collect data on growth rates. Some of the turtles will be fitted with radio transmitters and released into the wild where graduate students from Oklahoma State University will gather additional data on growth, survival, and habitat preferences.

Kerry Graves, Tishomingo NFH



-USFWS
Alligator gar.

Captive alligator gar broodstock were spawned to provide fry to researchers in Louisiana for toxicity studies. Some of the fry will be reared on station to gather data on age and growth and food preferences.

Kerry Graves, Tishomingo NFH

WOW! What a Great Day June 18, 2005 Was!

The Mora National Fish Hatchery and Technology Center and Coyote Creek State Park held the 1st Fishing Day for Kids in Mora County at Coyote Creek State Park. This was the Hatchery's 2005 National Fishing and Boating Week activity.

Registration began at 9:00am but kids and parents were in line by 8:30 ready to go with rods and reels. 243 very excited youngsters, age 15 and under, were registered for the event. Families came from all over New Mexico and as far away as Florida, Louisiana, and Washington.

The hatchery supplied 700 rainbow trout that averaged 1½ pounds each. Thirty individual fish were tagged to correspond

with 30 prizes donated by businesses and individuals. Most of the young anglers caught fish and quite a few had their three-fish-limit within minutes. Fourteen of the tags were returned for prizes. The remaining prizes were raffled off. An estimated \$1000.00 worth of donations were collected for this event. Donations included beverages, food, fishing pools, tackle box, and gift certificates.

The following groups and agencies spent considerable time and effort in organizing and participating; Mora National Fish Hatchery and Technology Center, Coyote Creek State Park, USDA-Natural Resource Conservation Service, USDA-Forest Service-Camino Real Ranger District, New Mexico Game and Fish Department, Bob and Shirley Malone. Special recognition goes out to Teresa Martinez from the hatchery and Matthew Romero from the state park.

John Seals, Mora NFH&TC



-USFWS
Happy anglers with fish.

Inks Dam National Fish Hatchery Assists Texas Parks and Wildlife Department Make Up for Losses Due to Fish Kills

Fish kills from the golden alga, *Prymnesium parvum*, have been documented in inland waters in Texas since 1985 and more recently at several fish hatcheries. Fish kills caused by the alga can be significant, resulting in both ecological and economic harm to the affected bodies of water. This year Texas Parks and Wildlife Department initiated a cooperative agreement with Inks Dam NFH to produce and distribute fish to mitigate for these losses. In accordance with this agreement, Inks Dam NFH provided the state of Texas with 190,800 phase 1 striped bass and 115,000 phase 1 largemouth bass.

Marc Jackson, Inks Dam NFH



-Carmelo Tomas
Golden alga.

FY 05 Fish Production and Distribution for Tribal Fishery Programs Completed for Inks Dam National Fish Hatchery

Fish production and distribution for tribal fishery management programs was completed for FY-05 during this quarter. Inks Dam NFH produced and distributed 93,168 fish weighing 22,739 pounds for the Sandia, Isleta, San Juan, Navajo, Zuni, Jicarilla, Zia, Laguna and Alabama Coushatta Indian Reservations. All production

commitments for tribal fishery management programs were either met or exceeded for FY-05. This accomplishment would not have been possible without the hard work and dedication of the Regional Distribution Unit (RDU) drivers, hatchery staff, and support the facility received from the Regional Office. The RDU also delivered fish for the Alchey/Williams Creek NFH and the Willow Beach NFH during this busy production season. The hatchery also began assisting Fort Hood with their Integrated Natural Resources Management Plan by providing the reservation with 2400 pounds of channel catfish and 30,000 phase 1 largemouth bass. In addition, the facility supported the fishery management programs of the San Jacinto National Forest by providing 2,500 channel catfish weighing 784 pounds.

Marc Jackson, Inks Dam NFH

Willow Beach National Fish Hatchery Reaches Out to the Public

The Willow Beach National Fish Hatchery used our new 3,634 liters (960 gallon) aquarium at three outreach events. This aquarium was transported to Summerlin, NV for an Earth Day fair to promote the value of native fish conservation and the role of the Willow Beach NFH in this preservation effort. Additionally, the tank was transported to the Tri-State (Arizona, Nevada, and California) Boating Safety Fair to publicize the hatchery's function in recreational fishing. These events provided unique opportunities to raise

awareness of the benefits and values associated with fishing and native fish management to a large number of people. To date, over 25,000 people have been served by this facilitated program.

Chester Figiel, Willow Beach NFH



-USFWS
Future Service Fish Biologist?

Rio Grande Silvery Minnow Brood Stock Collected

New Mexico FRO, as part of a propagation and augmentation program, began collecting Rio Grande silvery minnow *Hybognathus amarus* from portions of the middle Rio Grande valley for contribution as brood stock. Fish are being collected from the Isleta and San Acacia reaches and transferred back to New Mexico FRO where they are acclimated to isolated aquaria and are treated for both bacterial and viral infections. Post treatment fish are then transferred to one of six 200 gallon tanks that are part of a recirculation system and will be held until fall 2005. All Rio Grande Silvery minnow will then be transferred to Dexter National Fish Hatchery and Technology

Center and the City of Albuquerque to be used as brood stock in future years. To date, approximately 7,500 Rio Grande silvery minnow ranging from 10 to 45 millimeters have been collected. These efforts by New Mexico FRO and partners will aid in the conservation and recovery of this federally endangered fish.

Jason Davis, New Mexico FRO



-USFWS
Recirculation system located at the New Mexico FRO.

Pinetop Fish Health Center Involved in Developing a USFWS Fish Health Center Strategic Plan

The Pinetop Fish Health Center is actively involved with the other eight Fish and Wildlife Service, Fish Health Centers in developing a national Fish Health Center Strategic Plan (FHCSP). This detailed plan will guide what the FHCs will be involved in for the next ten years. The FHCSP will also discuss the types of staff and expertise that will be needed to meet the new and increasing demands for aquatic pathogen testing of hatchery and wild aquatic organisms.

Phil Hines, Pinetop FHC

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